CalESCO CALIFORNIA EARTH SCIENCE CORPORATION

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MONTHLY PROGRESS REPORT NO. 22
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Fault Tectonics and Earthquake Hazards in the Peninsular Ranges, Southern California, EREP Investigation 463

NASA-Lyndon B. Johnson Space Center
Technical Support Procurement Branch
Houston, Texas 77058

Attention: Mrs. Ruth Elder, Mail Stop BB631 (B9)

Dear Mrs. Elder:

California Earth Science Corporation (CalESCO) is pleased to submit its 22nd Monthly Progress Report on the application of Skylab imagery to analysis of fault tectonics and earthquake hazards in the Peninsular Ranges, Southern California under NASA Contract No. NAS 2-7698.

Summary Outlook

The principal plans for the immediate future are to continue analysis of images from SL1/SL2, SL3, and SL4.

Significant Progress

1. The merging of channels and the removal of the conical scan of the S192 images of the Mojave Desert test site has been accomplished.
2. Pseudocolor transformations of the test chart images for evaluation of the pseudocolor process have been prepared.
3. Dr. Paul D. Lowman, Jr. accompanied Drs. M. Hill, D. L. Lamar and P. M. Merifield on a field trip to the Peninsular Ranges. The trip resulted in a useful exchange of accomplishments and ideas on the nature of lineaments seen in Skylab and other space images.
4. A communication with Dr. Shawn Biehler, University of California, Riverside supported the existance of a fault along the west border of the Algadones Dunes southeast of the Salton Sea that had been interpreted from SL1/SL2 190A photos.

5. A paper summarizing significant results of this investigation was accepted for presentation at the Earth Resources Survey Symposium June 8-13, 1975 in Houston.
6. Analysis of SL4 photos of the Mojave Desert was continued. The primary objective is to establish criteria for distinguishing active from inactive faults.
7. Field studies of east-west and north-northeast trending lineaments in the Peninsular Ranges north and west of Ramona was completed. Evidence of faulting along two of the lineaments was discovered. Other lineaments are attributed to erosion along prominent joint directions.

Expected Accomplishments, Current Month

1. Digital enhancements of the various channels of the S192 data will be be performed.
2. The pseudocolor transformation of the gray scale chart will be used in evaluation of the pseudocolor process as an aid to photo interpretation.
3. Field work will be continued on the east-west trending lineaments in the Peninsular Ranges, and active faults in the Mojave Desert.
4. Work will be continued on the following final technical reports:

   Investigation of Lineaments on Skylab and ERTS Images of Peninsular Ranges, Southwestern California

   Skylab Imagery of the Salton Trough Area, Southern California

   Analysis of the Enhancement Characteristics of Pseudocolor Transformations

Travel Summary and Plans

Several days will be spent in the field in the western Mojave Desert and western San Diego County.

Very truly yours,

CALIFORNIA EARTH SCIENCE CORPORATION

Paul M. Merifield

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